

Chemical Analysis Report

SW-DIST-2016-07-07-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Klosterman**
Request ID: **RQ-2016-07-04-40**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Stephen Clingerman

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 25-JUL-2016 11:00

A handwritten signature in black ink, appearing to read 'Timothy W. Fitzpatrick', with a stylized flourish at the end.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: JERRY BRANCH

Collection Date/Time: 07/06/2016 11:00

Field ID: G5SW0117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1814094	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P307532	
	EPA 300.0 Rev. 2.1	Chloride	77		mg Cl/L	P308123	
		Sulfate	20		mg SO4/L	P308116	
	SM 2120 B	Color (true)	62		PCU	P307506	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P307629	
	SM 2540 C-97	TDS	296	A	mg/L	P308247	
	SM 2540 D-97	TSS	6	I	mg/L	P308177	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P307633	
1814096	EPA 350.1 Rev. 2.0	Ammonia-N	0.20		mg N/L	P307670	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P307704	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P307650	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P307661	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P308048	
1814098	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.090		mg P/L	P307498	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: LAKE JUANITA

Collection Date/Time: 07/06/2016 13:25

Field ID: G1SW0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1814095	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P307532	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P308122	
		Sulfate	4.6		mg SO4/L	P308119	
	SM 2120 B	Color (true)	61		PCU	P307506	
	SM 2320 B-97	Total Alkalinity	12	A	mg CaCO3/L	P307629	
	SM 2540 C-97	TDS	86		mg/L	P308242	
	SM 2540 D-97	TSS	3	I	mg/L	P308173	
	SM 4500 F-C-97	Fluoride	0.063	I	mg F/L	P307633	
1814097	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P307670	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P307704	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P307650	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P307661	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P308048	
1814099	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307498	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P307532

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308116

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308119

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308122

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308123

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307670

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307704

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307650

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307661

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307498

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P307506

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P307629

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P308242

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P308247

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P308173

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P308177

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P307633

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P308048

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308116

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308116

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308119

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308122

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308123

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	100		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307704

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307661

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	104		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P307629

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P307633

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P308048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1813897	Sulfate	101		P	90 - 110
1814048	Sulfate	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308119

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814095	Sulfate	99.3	97.8	P/P	90 - 110
1814122	Sulfate	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308122

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814095	Chloride	97.5	96.3	P/P	90 - 110
1814122	Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1813897	Chloride	99.8		P	90 - 110
1814048	Chloride	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814097	Ammonia-N	101	99.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814080	Kjeldahl Nitrogen	92.6	92.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814011	NO2NO3-N	105	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307661

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814096	Total-P	98.6	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814083	O-Phosphate-P	94.9	96.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P307633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814095	Fluoride	97.3	97.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P308048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814096	Organic Carbon	100	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814077	Turbidity	2.55	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1813897	Sulfate	1.44	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814095	Sulfate	1.33	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308122

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814095	Chloride	0.682	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1813897	Chloride	0.384	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814097	Ammonia-N	1.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814080	Kjeldahl Nitrogen	0.0319	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814011	NO2NO3-N	1.89	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814096	Total-P	0.273	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814083	O-Phosphate-P	1.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P307506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814149	Color (true)	4.22	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P307629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814095	Total Alkalinity	1.90	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P308242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1813987	TDS	0.375	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P308247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814094	TDS	0.337	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P307633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814095	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P308048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814096	Organic Carbon	0.172	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A70438
Included Lab Sample IDs: 1814098, 1814099

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A70439

Included Lab Sample IDs: 1814094, 1814095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	94.7	93.9	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A70445

Included Lab Sample IDs: 1814094, 1814095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: SM 2320 B-97

Run ID: A70476

Included Lab Sample IDs: 1814094, 1814095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70476

Included Lab Sample IDs: 1814094, 1814095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	99.5	P/P	90 - 110
Fluoride	99.5	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70479

Included Lab Sample IDs: 1814096, 1814097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70485

Included Lab Sample IDs: 1814096, 1814097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	100	P/P	90 - 110
Ammonia-N	99.9	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70494

Included Lab Sample IDs: 1814096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70498

Included Lab Sample IDs: 1814097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70537

Included Lab Sample IDs: 1814096, 1814097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	94.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A70540

Included Lab Sample IDs: 1814094, 1814095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.7	P/P	90 - 110
Chloride	99.7	98.5	P/P	90 - 110
Sulfate	100	96.6	P/P	90 - 110
Sulfate	96.6	98.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70583

Included Lab Sample IDs: 1814096, 1814097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.3	97.6	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					2.55	
EPA 300.0 Rev. 2.1	Chloride	97.1	96.3	97.7	97.5		0.682
	Chloride	100	99.8	100		0.384	
	Sulfate	99.9	101	100		1.44	
	Sulfate	96.9	99.3	97.8	97.3		1.33
EPA 350.1 Rev. 2.0	Ammonia-N	100	101	99.5			1.03
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	92.6	92.7			0.0319
EPA 353.2 Rev. 2.0	NO2NO3-N	108	105	107			1.89
EPA 365.1 Rev. 2.0	Total-P	97.5	98.6	98.2			0.273
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	94.9	96.3			1.23
SM 2120 B	Color (true)					4.22	
SM 2320 B-97	Total Alkalinity	104				1.90	
SM 2540 C-97	TDS					0.375	
	TDS					0.337	
SM 4500 F-C-97	Fluoride	99.0	97.3	97.8			0.477

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 5310 B-00	Organic Carbon	100	100 99.8			0.172

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1814094, 1814095
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1814094, 1814095
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1814094, 1814095
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1814096, 1814097
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1814096, 1814097
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1814096, 1814097
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1814096, 1814097
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1814098, 1814099
SM 2120 B / E31780	True Color measured at 450 nm	1814094, 1814095
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1814094, 1814095
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1814094, 1814095
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1814094, 1814095
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1814094, 1814095
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1814096, 1814097

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	07/07/2016			07/07/2016 15:16	Sima Feizi	1814094, 1814095
EPA 300.0 Rev. 2.1	07/07/2016			07/15/2016	Ping Hua	1814094, 1814095
EPA 350.1 Rev. 2.0	07/07/2016			07/11/2016	Diana M. Turner	1814096, 1814097
EPA 351.2 Rev. 2.0	07/07/2016	07/12/2016	Sofia Elnemr	07/13/2016	Christopher Armour	1814096, 1814097
EPA 353.2 Rev. 2.0	07/07/2016			07/11/2016	Beverly Y. Sanders	1814096, 1814097
EPA 365.1 Rev. 2.0	07/07/2016	07/11/2016	Vijayalakshmi Reddy	07/12/2016	Lipi Saha	1814096, 1814097
EPA 365.1 Rev. 2.0 dissolved	07/07/2016			07/07/2016 15:58	Julia Storbeck	1814098
	07/07/2016			07/07/2016 15:59	Julia Storbeck	1814099
SM 2120 B	07/07/2016			07/07/2016 17:25	Rochelle Y Jackson	1814094
	07/07/2016			07/07/2016 17:26	Rochelle Y Jackson	1814095
SM 2320 B-97	07/07/2016			07/09/2016	Dale L. Simmons	1814095
	07/07/2016			07/10/2016	Dale L. Simmons	1814094
SM 2540 C-97	07/07/2016			07/11/2016	Sima Feizi	1814094, 1814095
SM 2540 D-97	07/07/2016			07/11/2016	Sima Feizi	1814094, 1814095
SM 4500 F-C-97	07/07/2016			07/09/2016	Dale L. Simmons	1814095
	07/07/2016			07/10/2016	Dale L. Simmons	1814094
SM 5310 B-00	07/07/2016			07/15/2016	Sofia Elnemr	1814096, 1814097